

CLAIM SUMMARY DOCUMENT

*The following listing of claims will replace all prior versions and listings of claims
in this application.*

1. (Canceled)

2. (Previously Presented) A braking force distribution control device comprising:

wheel speed detecting means for detecting wheel speeds of respective wheels of a vehicle;

road surface μ slope estimating means for, on the basis of the detected wheel speeds, estimating for the respective wheels slopes of a coefficient of friction μ between the wheels and a road surface as road surface μ slopes;

control means for, on the basis of the road surface μ slopes estimated for the respective wheels by the road surface μ slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and

wherein on the basis of the detected wheel speeds, the road surface μ slope estimating means estimates slopes of braking forces with respect to wheel slip speeds as the road surface μ slopes for the respective wheels, and the control means controls a braking torque of a wheel which is an object of control on the basis of the road surface μ slope of the wheel which is an object of control and the road surface μ slope of a reference wheel among the road surface μ slopes estimated by the road surface μ slope estimating means.

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3. (Previously Presented) A braking force distribution control device according to claim 2, wherein in a case in which a front wheel is the reference wheel and a rear wheel is the wheel which is the object of control, when a variation between the road surface μ slope of the front wheel and the road surface μ slope of the rear wheel is greater than or equal to a predetermined value, the control means one of maintains and reduces the braking torque of the rear wheel, and when the variation is less than the predetermined value, the control means increases the braking torque of the rear wheel.

4. (Previously Presented) A braking force distribution control device according to claim 3, wherein when the control means one of maintains and reduces the braking torque of one of the rear wheels, the control means maintains the braking torque of another of the rear wheels.

5. (Previously Presented) A braking force distribution control device according to claim 2, wherein in a case in which a rear wheel is the reference wheel and a front wheel is the wheel which is the object of control, when a variation between the road surface μ slope of the front wheel and the road surface μ slope of the rear wheel is greater than or equal to a predetermined value, the control means increases the braking torque of the front wheel, and when the variation is less than the predetermined value, the control means one of maintains and reduces the braking torque of the front wheel.

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6. (Previously Presented) A braking force slope distribution device according to claim 2, wherein in a case in which a turning inner side wheel is the reference wheel and a turning outer side wheel is the wheel which is the object of control, when a variation between the road surface μ slope of the turning inner side wheel and the road surface μ slope of the turning outer side wheel is greater than or equal to a predetermined value, the control means increases the braking torque of the turning outer side wheel, and when the variation is less than the predetermined value, the control means one of maintains and reduces the braking torque of the turning outer side wheel.

7. (Previously Presented) A braking force distribution control device according to claim 2, wherein in a case in which a turning outer side wheel is the reference wheel and a turning inner side wheel is the wheel which is the object of control, when a variation between the road surface μ slope of the turning outer side wheel and the road surface μ slope of the turning inner side wheel is greater than or equal to a predetermined value, the control means one of maintains and reduces the braking torque of the turning inner side wheel, and when the variation is less than the predetermined value, the control means increases the braking torque of the turning inner side wheel.

8. (Previously Presented) A braking force distribution control device according to claim 2, wherein the control means controls the braking torque by using one of a turning inner side front wheel, a turning outer side front wheel, a turning inner side rear wheel,

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and a turning outer side rear wheel as the reference wheel, and using at least one other wheel as the wheel which is the object of control.

9. (Previously Presented) A braking force distribution control device comprising:

wheel speed detecting means for detecting wheel speeds of respective wheels of a vehicle;

road surface μ slope estimating means for, on the basis of the detected wheel speeds, estimating for the respective wheels slopes of a coefficient of friction μ between the wheels and a road surface as road surface μ slopes;

control means for, on the basis of the road surface μ slopes estimated for the respective wheels by the road surface μ slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and

wherein the control means includes:

a wheel target braking force computing means for computing target braking forces of the respective wheels on the basis of the estimated road surface μ slopes of the respective wheels and a target braking force of the vehicle; and

a braking force control means for controlling the braking forces of the respective wheels on the basis of the computed target braking forces of the respective wheels.

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10. (Original) A braking force distribution control device according to claim 9,
further comprising:

a braking operation amount detecting sensor which detects a braking operation
amount of a driver of the vehicle; and
target braking force computing means for computing a target braking force of the
vehicle on the basis of the braking operation amount.

11. (Original) A braking force distribution control device according to claim 9,
wherein the wheel target braking force computing means computes the target braking
forces of the respective wheels such that values of the road surface μ slopes of the
respective wheels are substantially equal.

12. (Original) A braking force distribution control device according to claim 10,
wherein the wheel target braking force computing means computes the target braking
forces of the respective wheels such that values of the road surface μ slopes of the
respective wheels are substantially equal.

13. (Previously Presented) A braking force distribution control device according
to claim 9, including two front wheels and two rear wheels, and wherein the wheel target
braking force computing means computes the target braking forces of the respective wheels

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such that values of the road surface μ slopes of the rear wheels of the vehicle are greater than values of the road surface μ slopes of the front wheels of the vehicle.

14. (Previously Presented) A braking force distribution control device according to claim 10, including two front wheels and two rear wheels, and wherein the wheel target braking force computing means computes the target braking forces of the respective wheels such that values of the road surface μ slopes of rear wheels of the vehicle are greater than values of the road surface μ slopes of front wheels of the vehicle.

15. (Original) A braking force distribution control device according to claim 9, wherein the wheel target braking force computing means computes the target braking forces of the respective wheels such that the target braking force is large for a wheel whose road surface μ slope value is high and the target braking force is small for a wheel whose road surface μ slope value is low.

16. (Original) A braking force distribution control device according to claim 10, wherein the wheel target braking force computing means computes the target braking forces of the respective wheels such that the target braking force is large for a wheel whose road surface μ slope value is high and the target braking force is small for a wheel whose road surface μ slope value is low.

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17. (New) A braking force distribution control device according to claim 9,
wherein the wheel target braking force computing means computes, on the basis of the
estimated road surface μ slopes of the respective wheels and the target braking force of the
vehicle, the target braking forces of the respective wheels such that a relation among the
estimated road surface μ slopes of the respective wheels is a predetermined relation.
